

REMARKS

The Examiner indicated that claims 13-16, 31, 36 and 37 are allowable but for their dependence on rejected base claims. Applicants thank the Examiner for indicating that these claims are allowable. Claim 13 is amended to include the limitations of the claims from which it depends. Claim 29 is amended to include the limitations of the claims from which it depends and the limitations of claim 31. Claims 14, 16, and 31 are canceled and claim 15 depends from claim 13. Accordingly, Applicants respectfully submit that claims 13, 15, and 29 are allowable.

Claims 1-12, 17-30, 32-35, and 38-45 are rejected under 35 U.S.C. 102(e) as being anticipated by Kondoh et al., U.S. Patent No. 6,194,743 (hereinafter "Kondoh"). Applicants respectfully traverse the rejection.

Claim 1 is amended to recite a "migration barrier [that] comprises at least one of Ti and W." Claim 32 is amended to recite a "migration barrier comprising at least one of Ti, W, Al, Cr, Cu, Au, Sn, Rh, Re, Ru." Applicants can find no such teaching in Kondoh. Accordingly, Kondoh does not anticipate claims 1 and 32. Claims 2, 3, 5, 7, 9, 11, 17, 19, 21 and 24 depend from claim 1 and are therefore allowable for at least the same reason as claim 1. Claims 33-43 depend from claim 32 and are therefore allowable for at least the same reason as claim 32.

Claims 4, 6, 8, 10, 15, 18, 23, 25 and 27 depend from or are amended to depend from claim 13 and are therefore allowable. Claims 12, 20, 22, 26, 30, 44, and 45 are canceled, rendering their rejection moot.


Claim 28 is amended to recite a "migration barrier [that] comprises at least one of Al, Cr, Cu, Au, Sn, Rh, Re, Ru." Applicants can find no such teaching in Kondoh. Accordingly, Kondoh does not anticipate claim 28.

In view of the above arguments, Applicants respectfully request allowance of all pending claims. Should the Examiner have any questions, the Examiner is invited to call the undersigned at (408) 382-0480.

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Respectfully submitted,



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ATTACHMENT A

IN THE CLAIMS

The claims are amended as follows:

1. (Amended) A light-emitting device, comprising:

a semiconductor structure having a plurality of semiconductor layers and including an active region within said layers;

first and second conductive metal electrodes contacting respectively different semiconductor layers of said structure; and

a migration barrier for preventing migration of metal from at least one of said electrodes onto the surface of the semiconductor layer with which said at least one electrode is in contact;

wherein said migration barrier comprises at least one of Ti and W.

4. (Amended) The device as defined by claim [2] 13, wherein said device further includes means for applying electrical signals across said first and second electrodes, and wherein said migration barrier is operative to prevent electrochemical migration of metal from said at least one electrode on said surface of the semiconductor layer with which said electrode is in contact.

11. (Amended) The device as defined by claim [1] 9, wherein said guard ring contacts said at least one electrode.

13. (Amended) A light-emitting device, comprising:

a semiconductor structure having a plurality of semiconductor layers and including an active region within said layers;

first and second conductive metal electrodes contacting respectively different semiconductor layers of said structure; and

a migration barrier for preventing migration of metal from at least one of said

electrodes onto the surface of the semiconductor layer with which said at least one electrode is in contact; [The device as defined by claim 1,]

wherein said migration barrier comprises a guard ring [is] spaced from said at least one electrode.

23. (Amended) The device as defined by claim [10] 13, wherein said guard ring comprises a conductive material.

24. (Amended) The device as defined by claim [22] 21, wherein said guard sheet comprises a conductive material.

28. (Amended) A light-emitting device, comprising:
a semiconductor structure having a plurality of semiconductor layers and including an active region within said layers;

first and second conductive metal electrodes contacting respectively different semiconductor layers of said structure; and

a migration barrier for preventing migration of metal from at least one of said electrodes onto the surface of the semiconductor layer with which said at least one electrode is in contact;

wherein said migration barrier [The device as defined by claim 26, wherein said conductive metal] comprises [a metal containing] at least one of [Ni, Ti, W,] Al, Cr, Cu, Au,
Sn, Rh, Re, Ru.

29. (Amended) A light-emitting device, comprising:
a semiconductor structure having a plurality of semiconductor layers and including an active region within said layers;

first and second conductive metal electrodes contacting respectively different semiconductor layers of said structure; and

a migration barrier for preventing migration of metal from at least one of said

electrodes onto the surface of the semiconductor layer with which said at least one electrode is in contact;

[The device as defined by claim 1,] wherein said migration barrier includes an edge protector portion comprising a dielectric material which covers an edge of said at least one electrode, and a conductive guard sheet that covers said edge protector portion and at least a portion of said at least one electrode.

32. (Amended) A light emitting device, comprising:

a semiconductor structure that includes a light-emitting active region between an n-type layer of III-V nitride semiconductor and a p-type layer of III-V nitride semiconductor;

a p-electrode comprising silver-containing metal deposited on said p-type layer;

an n-electrode coupled with said n-type layer;

means by which electrical signals can be applied across said electrodes to cause light emission from the active region; and

a migration barrier for preventing electrochemical migration of silver ions from said p-electrode toward the active region, the migration barrier comprising at least one of Ti, W, Al, Cr, Cu, Au, Sn, Rh, Re, Ru.